



Harmful Algal Blooms

WHAT IS THE PUBLIC HEALTH PROBLEM?

A harmful algal bloom (HAB) occurs when certain types of microscopic algae grow quickly in water, typically forming visible patches that may harm the health of the environment, plants, or animals. HABs can deplete the oxygen and block the sunlight that other organisms need to live, and some HAB-causing algae release toxins that are dangerous to animals and humans. HABs can occur in marine, estuarine, and fresh waters, and HABs appear to be increasing along the coastlines and in the surface waters of the United States, according to the National Oceanic and Atmospheric Administration.

CDC works with public health agencies, universities, and federal partners to investigate how the following algae, which can cause HABs, may affect public health:

- ***Cyanobacteria***, also known as blue-green algae, can produce toxins that may taint drinking water and recreational water. Humans who drink or swim in water that contains high concentrations of cyanobacteria or cyanobacterial toxins may experience gastroenteritis, skin irritation, allergic responses, or liver damage.
- ***Harmful marine algae***, such as those associated with red tides, occur in the ocean and can produce toxins that may harm or kill fish and marine animals. Humans who eat shellfish containing these toxins may experience neurologic symptoms (such as tingling fingers or toes) and gastrointestinal symptoms. Breathing air that contains toxins from algae associated with red tide may cause susceptible individuals to have asthma attacks.
- ***Pfiesteria piscicida***, a single-celled organism that lives in estuaries, has been found near large quantities of dead fish. Scientists do not yet know whether *P. piscicida* affects human health. However, reports of symptoms such as headache, confusion, skin rash, and eye irritation in humans exposed to water containing high concentrations of *P. piscicida* have prompted public concern.

WHAT HAS CDC ACCOMPLISHED?

To understand the possible human health effects associated with HABs, CDC is

- Studying human exposure to drinking water that contains microcystin, a cyanobacterial toxin that can affect the liver;
- Providing technical assistance to a study of whether residential filtration systems remove cyanobacterial toxins from drinking water, and working to determine the human health effects associated with cyanobacterial HABs in recreational water;
- Studying the health effects of fish poisoning associated with harmful marine algae;
- Measuring changes in the lung function of humans who have breathed air that contains marine toxins;
- Supporting states in building and implementing surveillance systems and studying the health effects of *P. piscicida*; and
- Collaborating with public health agencies and universities to expand a system that currently tracks human illness associated with *P. piscicida*, to include other human illnesses associated with HABs.

WHAT ARE THE NEXT STEPS?

CDC will continue to work with public health agencies, universities, and federal partners to investigate how blooms of cyanobacteria, marine microalgae, and *P. piscicida* may affect public health.

For information on this and other CDC and ATSDR programs, visit www.cdc.gov/programs.

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